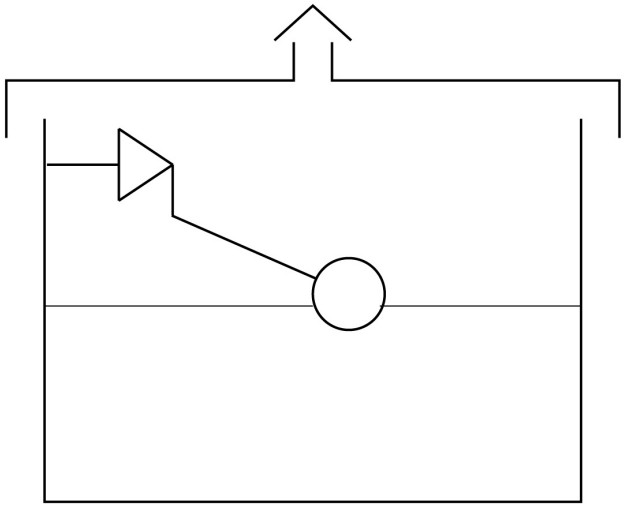
Student Study Section

Terminology used in plumbing

There are many incorrect terms used in plumbing work; the objective of this document is to bring together the correct names for components so that they can be used across plumbing to bring about a better understanding of what is meant in the industry.

e.g. there are "tanks" in the industry but what is often referred to as a tank is probably a "cistern".



Storage cistern

Terms

Water

Potable/wholesome water – water supplied by the local Water Supplier should be fit to drink. The plumber must maintain the quality whilst installing the water systems.

Soft water – rain water that falls on peaty, moorland & sandstone areas will be soft and acidic. Soft water tends to be more pleasant for washing activities, but it can increase many corrosion problems.

Hard water – water which contains a higher level of calcium salts. Temporary hard water, when heated deposits the calcium salts onto various components in a system causing "furring up". Hard water is alkaline.

Water softener – changes hard water to soft water. One of the softening processes involves the addition of common salt.

Water conditioner – this process does not soften the water; it stabilises the calcium salts so that they do not form scale on the plumbing components when the water is heated.

Cisterns

Cistern – a fixed container for holding water at atmospheric pressure.

Cisterns can be cube, cuboid or round in shape. They do not have a sealed cover that would stop atmospheric pressure acting on the surface of the water.

Storage cistern – a cistern for storing water for subsequent use.

A storage cistern can store water to deliver to a hot water storage vessel or for the cold distribution pipework on an indirect system.

Feed & Expansion cistern – a cistern for supplying cold water to a hot water or heating system.

Used for open vented central heating systems and indirect hot water systems.

Flushing cistern – a cistern provided with a valve, siphon or other device that controls the discharge of the stored water into a WC pan or urinal.

A flushing cistern is supplied with a WC suite; they can be high level, low level or close coupled. A non sealed lid is supplied with the cistern.

An automatic flushing cistern is fitted to a urinal installation; the volume of water flushed is strictly controlled to prevent wastage.

Nominal capacity – the amount of water contained in a cistern or other vessel when it is full to the top edge.

Actual capacity – the amount of water contained in a cistern when it is full to it's practical working level.

Tank – a vessel that is not open to atmosphere, usually a non cylindrical closed vessel.

Cold & Hot Water systems.

Communication pipe – from the water main to the property boundary.

This pipe is the responsibility of the Water Supplier.

Supply pipe – from the property boundary to the terminal fittings.

This pipe is the responsibility of the householder.

Service pipe – a term used to cover the communication pipe and supply pipe.

Distributing pipe – a pipe conveying water from a storage cistern, or from hot water apparatus supplied from a cistern, and under pressure from that cistern.

This covers cold pipes from a cistern to draw offs and also the hot pipework from a storage vessel to a draw off. It does not include overflows and warning pipes.

Primary circuit – an assembly of water fittings in which water circulates between a boiler and a primary heat exchanger inside a hot water storage vessel, and includes any space heating system.

This circuit includes boiler, primary flow & return pipes,

annular or coil inside the indirect cylinder, primary cold feed & open vent and feed & expansion cistern.

It also includes the pipework to/from radiators or other heat emitters.

Secondary circuit – an assembly of water fittings in which water circulates in supply pipes or distributing pipes of a hot water storage system.

A secondary circuit on a hot water system has flow pipework from the hot storage vessel to a point close to each draw off; the pipework then returns to the hot store vessel. When the draw off is opened hot water is available almost immediately.

Secondary system – an assembly of water fittings comprising the cold feed pipe, hot water storage vessel, water heater, and pipework from which hot water is conveyed to all draw off points.

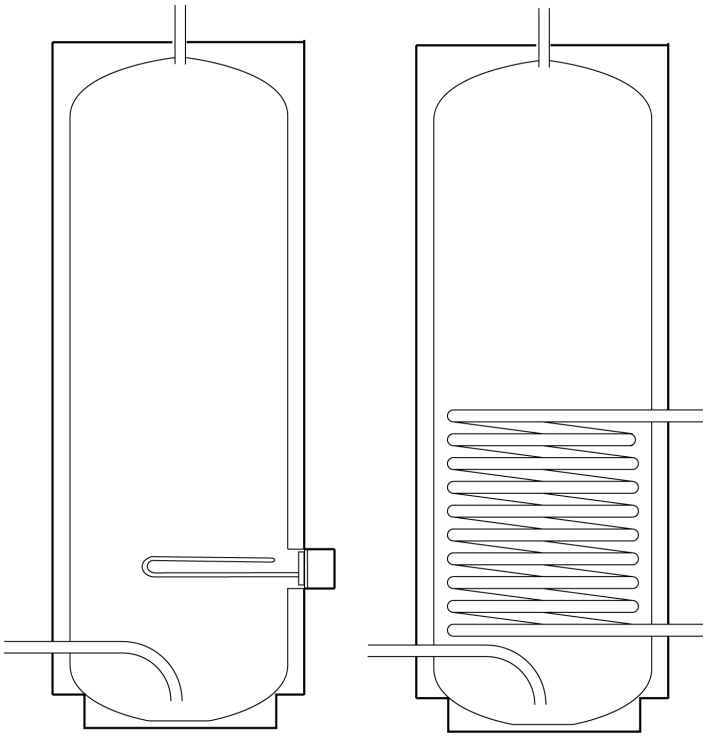
The secondary system is the pipework and components of a direct hot water system or the pipework and components of an indirect hot water system excluding the primary circuit.

Vent pipe – means a pipe open to atmosphere which opens the system to atmospheric pressure at its boundary.

The open vent pipe terminates in a cistern, the end of the pipe must not be in the water.

Dead Leg – a pipe that does not form part of a circuit. The water is static when taps are closed. A dead leg could be on a cold or hot water system.

Direct cylinder – a hot water storage vessel that is used on a direct hot water system. The water can be heated by a boiler or immersion heater; this cylinder could have an immersion heater only.



Direct cylinder

Indirect cylinder

Indirect cylinder – a hot water storage vessel that is used on an indirect hot water system. The cylinder has an annular or coil inside that forms part of the primary circuit. It will be heated by a boiler, with the possibility of an immersion heater as a secondary source of hot water.

Common sanitary appliances (for hot & cold water systems)

Wash basin –usually fitted into a bathroom or downstairs toilet. Used for hand & hair washing, shaving etc. Hot & cold required.

Sink or Sink unit – usually fitted into a kitchen or utility room. Used for washing up, cleaning vegetables and other food preparation activities. There are also specialist sinks including cleaners sinks; they are used for filling and emptying buckets. Hot & cold required.

W.C. suite – used for the collection and disposal of liquid and solid excrement. The W.C. pan is installed with the flushing cistern above. Cold water only.

Bidet – used for cleansing the lower excretory organs of the body. Hot & cold required. Good thermostatic control essential.

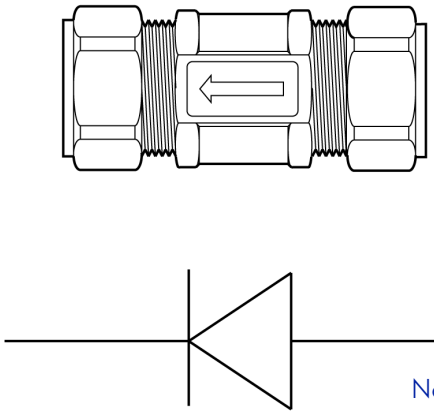
Bath – used for personal hygiene. Hot & cold required. Shower valves are commonly fixed over baths as an alternative to a shower tray.

Washing machines and **dishwashers** are commonly connected to plumbing systems. Most washing machines require hot & cold connections; a dishwasher is usually cold fill only.

Flow rate – the quantity/volume of water that is delivered to a tap on a sanitary appliance in litres per minute (l/m) or litres per second (l/s).

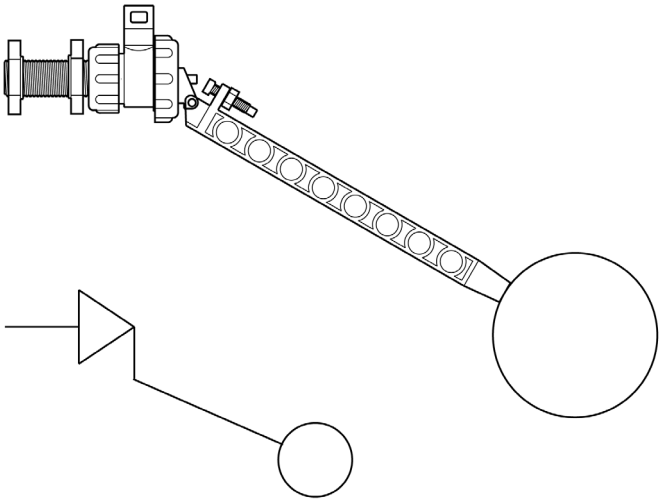
Valves

Non return valve – designed to permit water flow in one direction only. Under adverse conditions the valve closes, preventing any backflow and possible contamination.



Non return valve

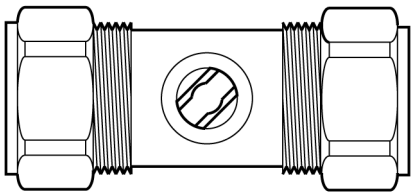
Float operated valve – installed into cisterns to automatically control the entry of water into the vessel. The water level can be adjusted on most valves.

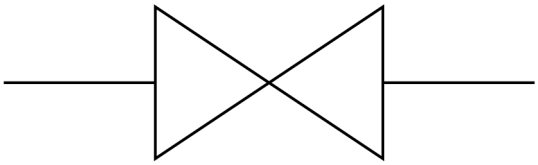


Float operated valve

Stop valve – used for shutting off the water supply to a dwelling. This valve is installed at the boundary of a property and near the point of entry to the dwelling.

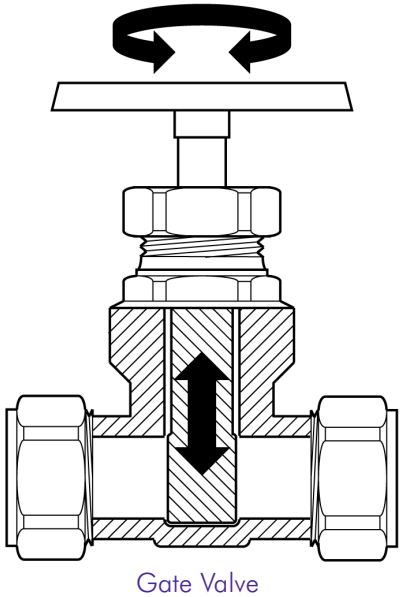
Servicing valve – installed near various appliances (e.g. cisterns) for the purpose of individual isolation for maintenance.





Servicing valve

Gate valve – generally used on low pressure pipework for isolation purposes.



Gate Valve

Shower mixing valve – designed to mix hot & cold water for safe temperature delivery to a shower head.

Thermostatic mixing valve – a blending valve that mixes cold water with hot to give a pre-determined water temperature at a hot tap.

Pressure reducing valve – fitted to the incoming cold water supply so that water pressure can be reduced where necessary.

Quarter turn ball valve, with a lever arm – used inside a property as an isolating/servicing valve. The lever action enables the user to easily isolate the water supply compared with a quarter turn valve that is turned off using a flat blade screwdriver.

Automatic Air Vent - designed to purge air automatically from a water system. It is normally positioned at high points on the system.

For further information the following documents can be referenced:

BS6100-3.3. Glossary of building and civil engineering terms - part 3: Services-Section 3.3: Sanitation

BS6700 Specification for design, installation, testing and maintenance of services supplying water to domestic use within buildings and their curtilages.